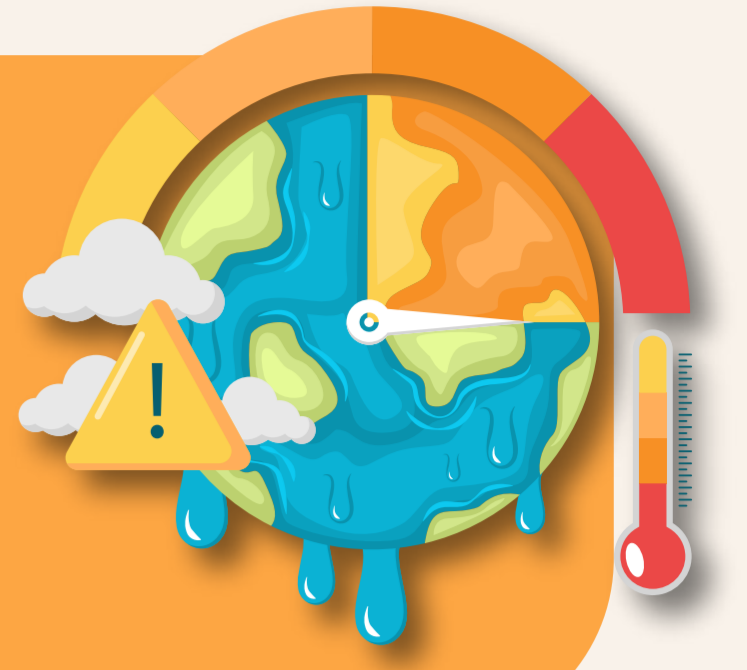


HEAT DOME

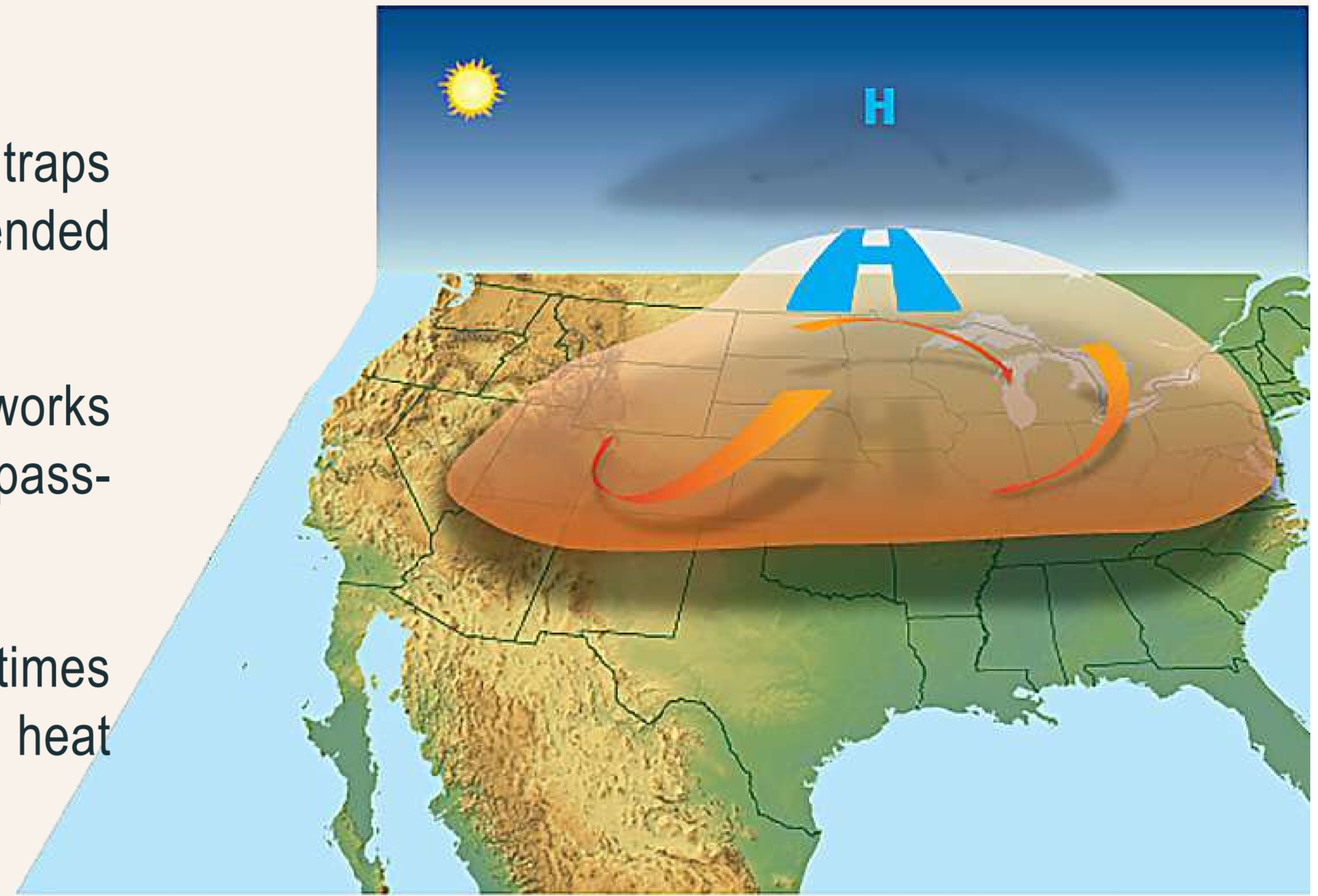
Context

Several parts of Europe witnessed an unprecedented winter heat wave over New Year's weekend. Temperatures increased 10 to 20 degrees Celsius above normal. The continent is experiencing an extreme warm spell because of the formation of a heat dome over the region.



What is a heat dome?

- A heat dome occurs when an area of high-pressure traps warm air over a region, just like a lid on a pot, for an extended period of time.
- The longer that air remains trapped, the more the sun works to heat the air, producing warmer conditions with every passing day.
- Heat domes generally stay for a few days but sometimes they can extend up to weeks, which might cause deadly heat waves.



Climate Change and Heat Domes



Researchers say that climate change may be making Heat Domes more intense and longer.

They suggest with the rising temperatures, it is expected that the jet stream will become wavier and will have larger deviations, causing more frequent extreme heat events.



Heat Domes and their impact on Human Beings

A heat dome can have serious impacts on people, because the stagnant weather pattern that allows it to exist usually results in weak winds and an increase in humidity. Both factors make the heat feel worse – and become more dangerous – because the human body is not cooled as much by sweating.

All these, increases the risk of heat illnesses and deaths. With global warming, temperatures are already higher, too.



The heat index, a combination of heat and humidity, is often used to convey this danger by indicating what the temperature will feel like to most people. The high humidity also reduces the amount of cooling at night.

One of the worst recent examples of the impacts from a heat dome with high temperatures and humidity in the U.S. occurred in the summer of 1995, when an estimated 739 people died in the Chicago area over five days.

Closing Thoughts

A 2022 study found that this heat dome was amplified by climate change and it could become a once-in-10-year event if global temperatures aren't kept under two degree Celsius above pre-industrialization levels.

